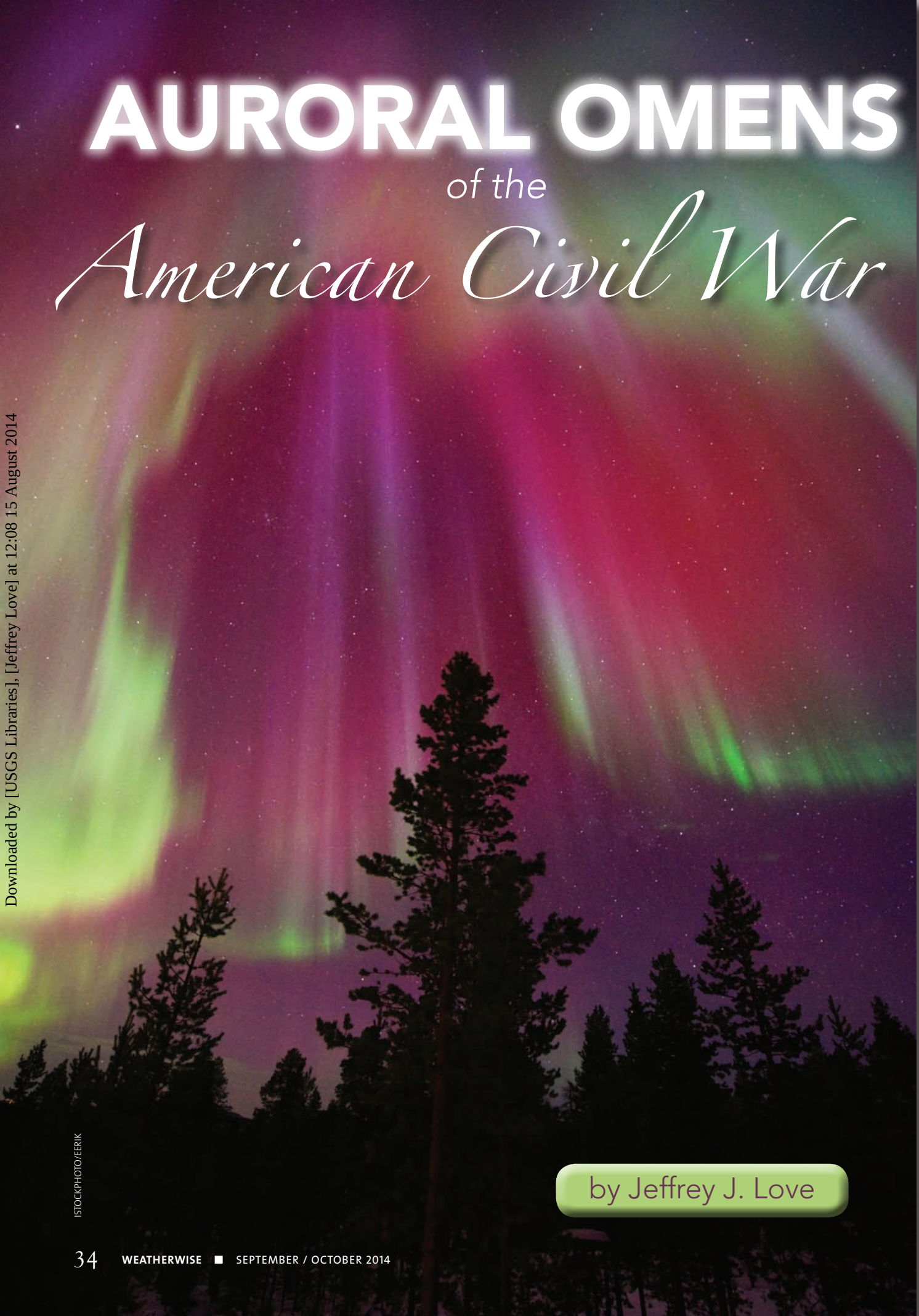
AURORAL OMENS of the American Civil War



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by Jeffrey J. Love

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Aurorae are a splendid night-time sight: coruscations of green, purple, and red fluorescent light in the form of gently wafting ribbons, billowing curtains, and flashing rays. Mostly seen at high latitudes, in the north aurorae are often called the northern lights or aurora borealis, and, in the south, the southern lights or aurora australis. The mystery of their cause has historically been the subject of wonder. The folklore and mythology of some far-northern civilizations attributed auroral light to celestial deities. And, in ironic contrast with their heavenly beauty, unusual auroral displays, such as those seen on rare occasions at lower southern latitudes, have sometimes been interpreted as portending unfavorable future events.

Today we understand aurorae to be a visual manifestation of the dynamic conditions in the space environment surrounding the earth. Important direct evidence in support of this theory came on September 1, 1859. On that day, an English astronomer named Richard Carrington was situated at his telescope, which was pointed at the sun. While observing and sketching a large group of sunspots, he saw a solar flare—intense patches of white light that were superimposed upon the darker sunspot group and which were illuminated for about a minute. One day later, a magnetic storm was recorded at specially designed observatories in Europe, across Russia, and in India. By many measures, the amplitude of magnetic disturbance was the greatest ever recorded.

In the United States, the effects of the Carrington storm could be seen as irregular back-and-forth deflections of a few degrees in the magnetized needle of a compass. Rapid magnetic variation also induced electric fields in the earth's conducting lithosphere, and interfered with the operation of telegraph systems. The Carrington magnetic storm, and an earlier storm that had occurred on August 28, 1859, caused spectacular displays of aurora borealis in the night-time sky over the entire United States and the western hemisphere, possibly all the way down to the equator. This was extremely unusual, so much so that an auroral event of this intensity hasn't happened since then.

The *New York Times* reported on August 30, 1859: "The heavens were arrayed in a drapery more gorgeous than they have been for years," and then, "Merry dancers ventured from their

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In August and September 1859, aurorae borealis were visible over all of the United States.

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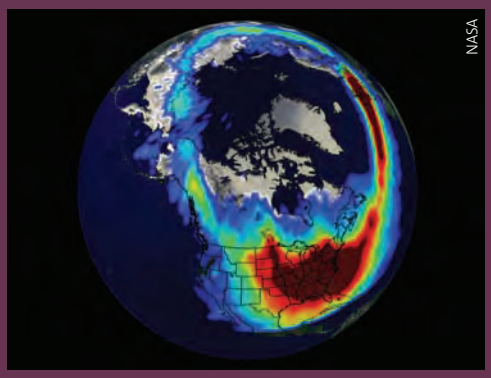
hiding places and played upon the horizon as though successive sheets of impalpable flame were sweeping over the sky." The *Baltimore Sun* reported on September 3, 1859: "There was another magnificent display of the aurora borealis," and then, "These appearances of the northern light are unusual in this latitude, but certainly sublime evidences of the mighty power that holds the heavens in His hands."

Cause of Aurorae

Magnetic storms are caused by the dynamic interaction of the solar wind with the Earth's magnetosphere. During a magnetic storm, electrically charged particles in the magnetosphere descend into the earth's ionosphere along geomagnetic field lines. This excites atmospheric oxygen and nitrogen, resulting in the luminous glow we call aurora. The geometry of the earth's magnetic field, and its evolution over the course of a magnetic storm, causes a concentration of night-side auroral light in an oval that is roughly centered on the earth's geomagnetic pole. During a large magnetic storm, such as the Carrington storms of August and September 1859, the auroral oval opens up and slides to lower latitudes. The figure below shows a schematic of the auroral oval during an intense storm, with red representing greatest auroral light intensity.



Antebellum Views

The 19th century is sometimes described as the Romantic period. During this time, and in contrast to the strict idea of the Enlightenment period that knowledge is ideally obtained through rigorous deductive reasoning, Romantic intellectuals placed emphasis on intuition, emotion, and personal experience. Nature was regarded with respect and awe. Influenced by the likes of Alexander von Humboldt, scientists of the Romantic period sought a holistic and integrated understanding of natural events. It was not unusual, for example, for scientists of the 19th century to speculate that aurorae might be related to other natural phenomena: meteors, terrestrial weather, lightning, earthquakes, and volcanic eruptions.

More generally, language and ideas were often infused with terms and images describing the natural world. For some, especially those from educated classes, natural metaphors were symbols, rhetorical conveniences, and they were often the subjects of art and literature. For others, the human connection with nature was perceived to be quite a bit more than just metaphorical; the connection was so real that surrounding natural events could be interpreted in terms of one's own personal experiences. In this context, it is worthwhile to recognize that daily life in the United States was not very far removed from the wilderness. In the 19th century, a large part of the American population was rural and resided on farms. Even for those living in cities, artificial lights were not yet sufficiently bright to completely obscure the stellar beauty of the nighttime sky.

Add to this, in the 19th century, the United States was a relatively religious nation. American Christianity had become increasingly evangelical and inspired to effect social change on a national scale. Most Christians would have also been familiar with ancient biblical prophetic visions, including Ezekiel's sparkling wheels in the sky, or signs in the sun, moon, and stars that the end of the world was near. The universe was God's creation, and, according to some interpretations of the Bible, he would occasionally intervene and influence natural events so as to provide us with an inkling as to what might happen in the future. Of course, as mere mortals, our ability to comprehend God's communication is limited, and we perceive as if "seeing through a glass darkly."

Omens of War

The great auroral displays of 1859 came at a poignant moment in American history: the United States stood on the brink of civil war. This had been preceded by many years of political, economic, social, and moral divergence between Southern and Northern states, the fundamental cause of which was slavery. Black Africans had been forcibly brought to the Americas during European colonization in the 17th and 18th centuries. Slavery was legal when the United States declared its independence as a country. By the 19th century, slavery was a deeply entrenched

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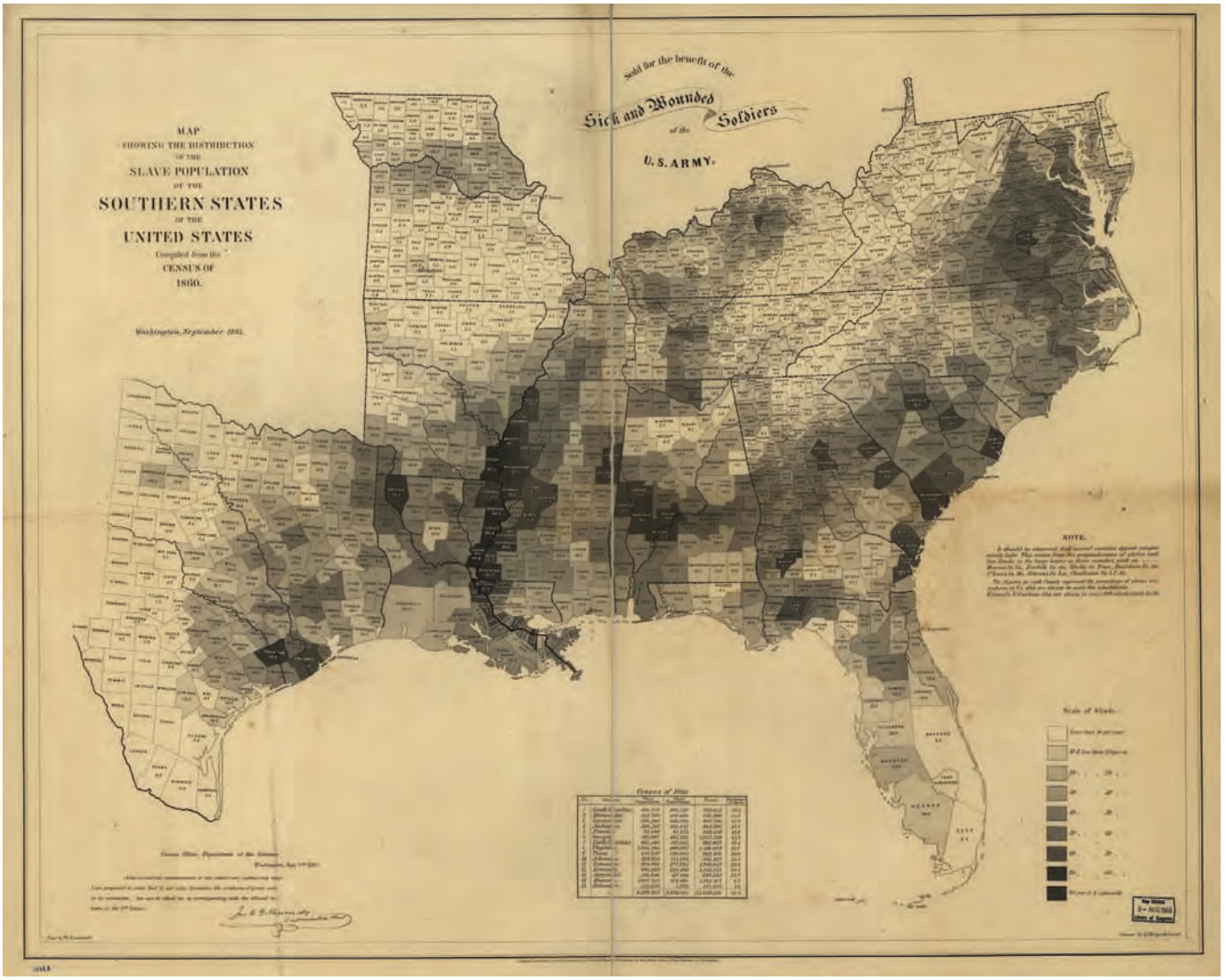

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Figure 1. Map showing percentage of population enslaved per county in the southern United States in the year 1860.

institution in Southern states, with many slaves working on labor-intensive cotton farms. On the eve of the American Civil War, about one-third of the population in the South was enslaved, and about two-thirds of the population of South Carolina was enslaved (see Figure 1). In the North, slavery had never been as prevalent as in the South, and by the 19th century it had been effectively abolished in most Northern states. White citizens in the North were mostly opposed to slavery being permitted in new Western states, and an increasing number supported its outright abolition throughout the United States.

Given the circumstances, in the decades preceding the Civil War, emotional tension in the United States had been rising. Not surprisingly, there were occasional slave rebellions; the most noteworthy of these occurred in Virginia in 1831. Nat Turner was a charismatic, self-educated, and deeply religious black slave. Turner claimed to have had visions of "lights in the sky," of "white spirits and black spirits engaged in battle," and of a "darkened" sun. When an annular eclipse was seen in Virginia on February 12, 1831, Turner interpreted this as a sign from God that it was time to act. On August 13, 1831, he led about 60 slaves on a rampage that killed about 60 whites. Retaliation was swift and bloody. White mobs killed between 100 and 200 blacks. Turner was arrested, found guilty of insurrection, and hanged.

The Turner rebellion spread fear among slave owners. Southern legislators passed laws restricting the education and activities of slaves and free blacks. In a January 1832 speech before the Virginia House of Delegates, Representative James H. Gholson described the situation in terms of an auroral metaphor: "Northern lights have appeared. Incendiary publications have scattered their illuminating rays among us, to conduct the slave to massacre and bloodshed. But these are not lights of the age, or lights from

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heaven. It is the glare of Avernus—a darkness visible, in the light of which, demons and devils alone delight to dwell." Borrowing mythological imagery from John Milton and *Paradise Lost*, Gholson's rhetoric is obviously metaphorical. He may have been intending to cast aspersions on Northern abolitionists. Gholson continued: "I most ardently hope that these northern lights will not be disregarded or overlooked by the Southern Republics of this Union. Sir, they must be extinguished, or the most melancholy consequences will ensue." Gholson was possibly motivated to adopt such apocalyptic language by a personal fear of slave insurrection. He was, himself, a slave owner.

Recognizing the context, then, it is not surprising that some would have seen the fantastic aurora borealis of 1859 as portending turmoil and, even, war. Consider, for example, the report given on of September 13, 1859, in the *Charleston* (South Carolina) *Mercury* newspaper: "Aurora Borealis. This wonderful phenomenon was exhibited on Thursday night of last week in all the brilliancy ascribed to it in polar regions." The article then reports that the town bell was rung as citizens ran through the streets shouting "day of judgment" and "end of time." The article recounts that one person "thought it was a harbinger of the dissolution of the Union and war between the North and South, and as the streams of light seemed to pass from a point in the N. W. and N. E. up toward zenith, they argued that the South would be victorious in the struggle."

> "the town bell was rung as citizens ran through the streets shouting 'day of judgment' and 'end of time.'"

Personal diaries provide important firsthand accounts of public perceptions. Consider, for example, Daniel W. Cobb, a poor, white, semiliterate Virginia farmer and slave owner. In his diary, 1842-1872, Cobb records numerous mundane day-to-day details: his lonely life, the productivity of his farm, the output of his still, and, even, complaints about his wife and her family. Cobb's entry for September 2, 1859, reads: "They was a singular appearance in the element during the passed night at 11 they was red streak in the W. it passed to the E. as a cloud & then became as light as day and at 1 it was light so as to see well." This is a vivid, if colloquial, description of the aurora borealis of the Carrington magnetic storm. Subsequently, but perhaps even more interestingly, on September 10, 1859, he related these celestial observations to rumors of unrest: "They Grate to do a bout a insurrection." Cobb had heard, or had come to believe, that black slaves, influenced by "the lights nights," were plotting retribution against "White foalks [sic]."

On November 11, 1859, the *Charleston Mercury* published a letter to the editor from a South Carolina slave owner. Identifying himself only as "Vigilant," he claimed that his slaves "regard the recent Aurora Borealis as a sign of war," and that they had been told this by a freed black man, probably a former slave. In expressing concern about possible future slave rebellion, Vigilant recalled, with obvious angst, John Brown, the zealous white abolitionist, who on October 16, 1859, had led an armed cadre of black and white men on a raid on the federal government armory in Harpers Ferry, Virginia. Brown intended to capture weapons and distribute them to rebellious slaves. From there, he would lead a violent crusade into the South, which he hoped would overthrow the institution of slavery. But the Harpers Ferry raid was quickly put down. Brown was arrested, found guilty of treason, and hanged on December 2, 1859. Having heard exaggerated rumors of these events, Daniel Cobb, our curmudgeonly Virginia farmer, remarks in his diary on October 27, 1859, that Brown's raid included 15,000 blacks. Evidently, the fog of war had arrived even before the war itself had started.

First-hand accounts of slaves are, unfortunately, rare. Deprived of education, most slaves were illiterate. However, long after the war, in the 1930s, the Works Progress Administration sponsored a project for chronicling the experiences of former slaves. By the time they were interviewed, they were all elderly; many of the narratives are harrowing personal accounts of atrocities; others are simply experiences, impressions, and generalities. Two slave narratives are of relevance regarding the aurora.

Consider the narrative of Dora Jackson, a woman born into black enslavement in the Southern state of Mississippi just before the outbreak of the Civil War. In her narrative, she recalled an event that she says her mother

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Figure 2. Political cartoon from Harper's Weekly, May 25, 1861.

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had told to her: "She say one night 'fore de war come, she and some other women wus washing clothes down at a creek, when all at once dey look up at de sky, and dey see guns and swords streaking cross de sky." And, then, "befo' de war come," she recalls: "dey saw dem guns jest like dey did in de sky." What Jackson described was certainly a dazzling sight, but it is impossible to say whether or not this was the aurora borealis of 1859. Jackson's account of events is secondhand, and, while obviously not literal, it records rising tension before the Civil War and the interpretations that slaves would have assigned to specific natural events in the sky.

Next, consider the narrative of Frank A. Patterson, who was born into black enslavement in North Carolina in 1850. He and his parents were later sold to a Georgia farmer and slave owner. Patterson recalled: "Before the War, I saw the elements all red as blood and I saw after that a great comet; and they said there was going to be a war." By "elements" Patterson is referring to the sky and its weather (Cobb used this word in a similar way). It is noteworthy that Patterson regarded the sight of a blood-red sky as significant. This would not have been just another pretty sunset. No, it is more likely that Patterson was recalling something truly unusual and seemingly ominous—a rare southern sighting of aurora borealis, possibly that due to the great magnetic storms of 1859. As for the comet, Patterson is probably recalling the great comet of 1861 that was visible in the early stages of the Civil War, and which many people regarded as portending continued conflict.

War Begins

When Abraham Lincoln was elected President of the United States on November 6, 1860, he received almost no support from the Southern states. Lincoln had always been morally opposed to slavery, but during his campaign he ran on a limited platform of no expansion of slavery into Western territories. Still, with Northern states not extraditing fugitive slaves back to the south, and with some politicians and religious leaders in the North actively working to abolish slavery, Southern politicians responded to Lincoln's election with defiance. On December 20, 1860, South Carolina declared secession from the United States.

The mood in nearby Savannah, Georgia, on December 20, 1860, was recorded in the reminiscences of Elizabeth L. Saxon, a woman who,

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Figure 3. *Aurora Borealis* by Frederic E. Church.

after the war, would become an important leader for women's suffrage: "As long as I live—for the years have not dimmed the memory—I shall recall with a sickening pain, the excitement and distress among the people." She says that "it seemed as if the very air was ablaze with some terrible unseen flame." People were forced to take sides, "men and women were flying everywhere, the Southerner to the South, the Northerner to the North", but, otherwise, "few knew what to do."

"it seemed as if the very air was ablaze with some terrible unseen flame"

Saxon recalled that "it was near this time that the wonderful spectacle of the Aurora Borealis was seen in the Gulf States. She describes it as if "the whole sky was a ruddy glow as if from an enormous conflagration, but marked by the darting rays peculiar to the Northern light." And that "it caused much surprise, and aroused the fears even of those far from superstitious."

Perhaps Saxon is recalling an auroral display that occurred immediately after South Carolina's secession. Historical geophysical data recorded the occurrence of a medium-size magnetic storm on December 25, 1860; a larger storm occurred on January 26, 1861. More likely, however, in recalling events long after they occurred, Saxon is describing the great auroral displays of 1859, which she is retrospectively associating with her recollection of tumultuous events.

By March 1861, seven Southern states had declared independence from the Union of the United States and formed the Confederate States of America, and soon four more Southern states joined the Confederacy. In April 1861, following a Confederate siege on Fort Sumter, a Federal Government fortress in the harbor of Charleston, South Carolina, any ambivalence that had existed in the North and in the South for military action quickly evaporated. Citizens rallied for their own side and generally supported military action against the other side. Shortly thereafter, an interesting politi-

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Aurora-Borealis

The great American author, Herman Melville, most famous for his epic novel *Moby Dick,* recorded his observations of the Civil War in poetry. His 1865 poem, "Aurora-Borealis," is a metaphorical reflection on the war-time course of events:

What power disbands the Northern Lights
After their steely play?
The lonely watcher feels an awe
Of Nature's sway,
As when appearing,
He marked their flashed uprearing
In the cold gloom--
Retreatings and advancings,
(Like dallyings of doom),
Transitions and enhancings,
And bloody ray.

The phantom-host has faded quite,
Splendor and Terror gone—
Portent or promise—and gives way
To pale, meek Dawn;
The coming, going,
Alike in wonder showing—
Alike the God,
Decreeing and commanding
The million blades that glowed,
The muster and disbanding—
Midnight and Morn.

cal cartoon was published on May 25, 1861, in *Harper's Weekly* (Figure 2), which uses the image of the aurora borealis to represent the resolve that many in the North hoped would motivate the South to sue for peace. This did not happen. The American Civil War, the bloodiest war in the nation's history, had begun.

Epilogue

Over the course of four years, both the Union and the Confederacy won and lost battles, but eventually momentum swung in favor of the Union. And, when the war finally did end, on May 10, 1865, some celebrated, but many others grieved. A restrained visual depiction of post-war Northern emotion can be found in the painting *Aurora Borealis* by Frederic E. Church (Figure 3). It can be reasonably interpreted as an abstract representation of the American flag stretched across the night-time sky. Aurora Borealis demonstrates Church's artistic awareness of the power of light. The mood is one of quiet melancholy, which one might imagine the artist considered appropriate for the year in which the Civil War finally came to an end.

Slavery was formally abolished in the United States on December 18, 1865, with the adoption of the 13th amendment to the Constitution. W

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